

## **ABSTRACT**

A storage device host controller such as an SATA (Serial ATA) host controller and a corresponding method are provided for performing host-to-device and  
5 device-to-host communications in a PIO (Programmed I/O) data transfer mode and a DMA (Direct Memory Access) data transfer mode. The host controller comprises a buffer unit for buffering data and a data stream selection unit for selecting a data stream for submission to the buffer unit. The data stream selection unit is connected to receive at any one time at least one of a host-to-  
10 device data stream in the PIO data transfer mode, a host-to-device data stream in the DMA data transfer mode, a device-to-host data stream in the PIO data transfer mode, and a device-to-host data stream in the DMA data transfer mode, and select from the received data streams the data stream to be submitted to the buffer unit.